#### Appendix B

#### Toxic Air Contaminant List Substances By Category December 1999

#### Category I

## Substances identified as Toxic Air Contaminants, known to be emitted in California, with a full set of health values reviewed by the Scientific Review Panel.

| Substance  | CAS<br>Number | Cancer<br>Potency<br>Value | Chronic<br>Reference<br>Exposure Level | Acute<br>Reference<br>Exposure Level |
|--|---------------|----------------------------|--|--------------------------------------|
| * Perchloroethylene (Tetrachloroethylene)  | 127-18-4      | √                          | $\sqrt{}$                              | $\sqrt{}$                            |
| (There is a potential for 12 substances to move into this category after the SRP has reviewed the noncancer chronic Reference Exposure Levels being developed under the Air Toxics "Hot Spots" Program.) |               |                            |  |                                      |

#### **Category IIa**

| Substance    | CAS<br>Number | Cancer<br>Potency<br>Value<br>(Note 1) | Chronic<br>Reference<br>Exposure Level<br>(Note 2) | Acute<br>Reference<br>Exposure Level<br>(Note 3) |
|--------------|---------------|--|--|--|
| Acetaldehyde | 75-07-0       | √                                      | $\sqrt{}$  | limited data available                           |
| Acetamide    | 60-35-5       | √                                      | limited data available                             | limited data available                           |
| ☆ Acrolein   | 107-02-8      | i (Note1)                              | ×  | √  |
| Acrylamide   | 79-06-1       | <b>√</b>                               | ×  | limited data available                           |
| Acrylic acid | 79-10-7       | ii (Note 1)                            | ×  | √  |

- $\sqrt{\ }$  Health value has been reviewed by the Scientific Review Panel
- X Health value is currently under development by the OEHHA
- ‡ Substance nominated for the development of additional health values
- 🌣 Substance is an active ingredient in pesticides in California

| Substance   | CAS<br>Number | Cancer<br>Potency<br>Value<br>(Note 1) | Chronic<br>Reference<br>Exposure Level<br>(Note 2) | Acute<br>Reference<br>Exposure Level<br>(Note 3) |
|---|---------------|--|--|--|
| Acrylonitrile   | 107-13-1      | √                                      | ×  | limited data available                           |
| Allyl chloride  | 107-05-1      | √                                      | ×  | limited data available                           |
| Aniline   | 62-53-3       | √                                      | ×  | limited data available                           |
| Antimony and compounds (Note 4)   | 7440-36-0     | ii (Note1)                             | limited data available                             | limited data available                           |
| Antimony trioxide   | 1309-64-4     | i (Note1)                              | ×  | limited data available                           |
| *  *  Inorganic Arsenic and arsenic compounds  (inoganic including arsine) (Note 4)   | 7440-38-2     | $\sqrt{}$                              | ×  | √  |
| Arsine  | 7784-42-1     | ii (Note1)                             | ×  | √  |
| * Asbestos [asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite- grunerite (amosite), tremolite, actinolite, and anthophyllite] | 1332-21-4     | √                                      | limited data available                             | limited data available                           |
| * Benzene (including benzene from gasoline)   | 71-43-2       | √                                      | ×  | √  |
| Benzyl chloride   | 100-44-7      | √                                      | limited data available                             | √  |
| Beryllium and compounds (Note 4)  | 7440-41-7     | √                                      | ×  | limited data available                           |
| Bis(chloromethyl)ether  | 542-88-1      | √                                      | limited data available                             | limited data available                           |
| Bis(2-ethylhexyl)phthalate (DEHP)   | 117-81-7      | √                                      | ×  | limited data available                           |
| * 1,3-Butadiene   | 106-99-0      | √                                      | ×  | limited data available                           |
| * Cadmium and compounds (Note 4)<br>(metallic cadmium and cadmium compounds)  | 7440-43-9     | V                                      | ×  | limited data available                           |
| Carbon disulfide  | 75-15-0       | ii (Note1)                             | ×  | √  |
| * Carbon tetrachloride (Tetrachloromethane)   | 56-23-5       | √                                      | ×  | √  |
| * Chlorinated dibenzo-p-dioxins (Note 5)  | N/A           | √                                      | ×  | limited data available                           |
| 2,3,7,8-Tetrachlorodibenzo-p-dioxin   | 1746-01-6     | √                                      | ×  | limited data available                           |

 $<sup>\</sup>sqrt{\ }$  - Health value has been approved by the Scientific Review Panel

X - Health value is currently under development by the OEHHA

<sup>‡ -</sup> Substance nominated for the development of additional health values

<sup>♥ -</sup> Substance is an active ingredient in pesticides in California

| Substance  | CAS<br>Number | Cancer<br>Potency<br>Value<br>(Note 1) | Chronic<br>Reference<br>Exposure Level<br>(Note 2) | Acute<br>Reference<br>Exposure Level<br>(Note 3) |  |
|--|---------------|--|--|--|--|
| International Toxicity Equivalency Factors:        |               |  |  |  |  |
| 1,2,3,4,6,7,8-Heptachlorodibenzo- <i>p</i> -dioxin | 35822-46-9    | √                                      | ×  | limited data available                           |  |
| 1,2,3,4,7,8-Hexachlorodibenzo- <i>p</i> -dioxin    | 39227-28-6    | √                                      | ×  | limited data available                           |  |
| 1,2,3,6,7,8-Hexachlorodibenzo- <i>p</i> -dioxin    | 57653-85-7    | √                                      | ×  | limited data available                           |  |
| 1,2,3,7,8,9-Hexachlorodibenzo- <i>p</i> -dioxin    | 19408-74-3    | √                                      | ×  | limited data available                           |  |
| 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin         | 3268-87-9     | √                                      | ×  | limited data available                           |  |
| 1,2,3,7,8-Pentachlorodibenzo-p-dioxin              | 40321-76-4    | √                                      | ×  | limited data available                           |  |
| * Chlorinated dibenzofurans (Note 5)               | N/A           | √                                      | ×  | limited data available                           |  |
| International Toxicity Equivalency Factors:        |               |  |  |  |  |
| 2,3,7,8-Tetrachlorodibenzofuran                    | 5120-73-19    | √                                      | ×  | limited data available                           |  |
| 1,2,3,4,7,8-Hexachlorodibenzofuran                 | 70648-26-9    | <b>√</b>                               | ×  | limited data available                           |  |
| 1,2,3,6,7,8-Hexachlorodibenzofuran                 | 57117-44-9    | <b>√</b>                               | ×  | limited data available                           |  |
| 1,2,3,7,8,9-Hexachlorodibenzofuran                 | 72918-21-9    | <b>√</b>                               | ×  | limited data available                           |  |
| 2,3,4,6,7,8-Hexachlorodibenzofuran                 | 60851-34-5    | <b>√</b>                               | ×  | limited data available                           |  |
| 1,2,3,4,6,7,8-Heptachlorodibenzofuran              | 67562-39-4    | √                                      | ×  | limited data available                           |  |
| 1,2,3,4,7,8,9-Heptachlorodibenzofuran              | 55673-89-7    | √                                      | ×  | limited data available                           |  |
| 1,2,3,4,6,7,8,9-Octachlorodibenzofuran             | 39001-02-0    | √                                      | ×  | limited data available                           |  |
| 1,2,3,7,8-Pentachlorodibenzofuran                  | 57117-41-6    | <b>√</b>                               | ×  | limited data available                           |  |
| 2,3,4,7,8-Pentachlorodibenzofuran                  | 57117-31-4    | √                                      | ×  | limited data available                           |  |
| ☆ Chlorine   | 7782-50-5     | ii (Note1)                             | ×  | √  |  |
| Chlorobenzene                                      | 108-90-7      | ii (Note1)                             | ×  | limited data available                           |  |
| * Chloroform                                       | 67-66-3       | √                                      | ×  | √  |  |
| ⇔ Chromium and compounds (Note 4)                  | 7440-47-3     | $\sqrt{}$                              | limited data available                             | limited data available                           |  |

 $<sup>\</sup>sqrt{\ }$  - Health value has been approved by the Scientific Review Panel

X - Health value is currently under development by the OEHHA

<sup>‡ -</sup> Substance nominated for the development of additional health values

<sup>♥ -</sup> Substance is an active ingredient in pesticides in California

| Substance                                   | CAS<br>Number | Cancer<br>Potency<br>Value<br>(Note 1) | Chronic<br>Reference<br>Exposure Level<br>(Note 2) | Acute<br>Reference<br>Exposure Level<br>(Note 3) |
|---|---------------|--|--|--|
| * Chromium (VI)                             | 18540-29-9    | $\sqrt{}$                              | ×  | limited data available                           |
| Cobalt and compounds (Note 4)               | 7440-48-4     | i (Note1)                              | ×  | limited data available                           |
| Cresols/Cresylic Acid (isomers and mixture) | 1319-77-3     | ii (Note1)                             | ×  | limited data available                           |
| Cyanide compounds (Notes 4 & 11)            | 57-12-5       | ii (Note1)                             | limited data available                             | √  |
|   | 106-46-7      | √                                      | ×  | limited data available                           |
| 3,3-Dichlorobenzidene                       | 91-94-1       | √                                      | limited data available                             | limited data available                           |
| Diethanolamine                              | 111-42-2      | ii (Note 1&6)                          | ×  | limited data available                           |
| Dimethyl formamide                          | 68-12-2       | ii (Note1)                             | ×  | limited data available                           |
| 1,4-Dioxane (1,4-Diethyleneoxide)           | 123-91-1      | $\sqrt{}$                              | ×  | √  |
| Epichlorohydrin (1-Chloro-2,3-epoxypropane) | 106-89-8      | √                                      | ×  | √  |
| 1,2-Epoxybutane                             | 106-88-7      | i (Note1)                              | ×  | limited data available                           |
| Ethyl benzene                               | 100-41-4      | ii (Note1)                             | ×  | limited data available                           |
| Ethyl carbamate (Urethane)                  | 51-79-6       | √                                      | limited data available                             | limited data available                           |
| Ethyl chloride (Chloroethane)               | 75-00-3       | ii (Note1)                             | ×  | limited data available                           |
| * Ethylene dibromide (1,2-Dibromoethane)    | 106-93-4      | √                                      | ×  | limited data available                           |
| * Ethylene dichloride (1,2-Dichloroethane)  | 107-06-2      | √                                      | ×  | limited data available                           |
| Ethylene glycol                             | 107-21-1      | ii (Note1)                             | ×  | limited data available                           |
| *¢Ethylene oxide (1,2-Epoxyethane)          | 75-21-8       | √                                      | ×  | limited data available                           |
| Ethylene thiourea                           | 96-45-7       | √                                      | ×  | limited data available                           |
| Ethylidene dichloride (1,1-Dichloroethane)  | 75-34-3       | √                                      | limited data available                             | limited data available                           |
| *  Formaldehyde                             | 50-00-0       | √                                      | ×  | √  |

 $<sup>\</sup>sqrt{\ }$  - Health value has been approved by the Scientific Review Panel

X - Health value is currently under development by the OEHHA

<sup>‡ -</sup> Substance nominated for the development of additional health values

<sup>🌣 -</sup> Substance is an active ingredient in pesticides in California

| Substance   | CAS<br>Number | Cancer<br>Potency<br>Value<br>(Note 1) | Chronic<br>Reference<br>Exposure Level<br>(Note 2) | Acute<br>Reference<br>Exposure Level<br>(Note 3) |
|---|---------------|--|--|--|
| Glycol ethers (Note 4 & 7)  | N/A           | ii (Note1)                             | ×  | $\sqrt{}$  |
| ☼ Ethylene glycol monobutyl ether   | 111-76-2      | ii (Note1)                             | ×  | ×  |
| Ethylene glycol monoethyl ether   | 110-80-5      | ii (Note1)                             | ×  | ×  |
| Ethylene glycol monoethyl ether acetate   | 111-15-9      | ii (Note1)                             | ×  | ×  |
| Ethylene glycol monomethyl ether  | 109-86-4      | ii (Note1)                             | ×  | ×  |
| Ethylene glycol monomethyl ether acetate  | 110-49-6      | ii (Note1)                             | ×  | limited data available                           |
| Hexachlorobenzene   | 118-74-1      | √                                      | ×  | limited data available                           |
| Hexachloroethane  | 67-72-1       | i (Note1)                              | ×  | limited data available                           |
| Hexamethylene-1,6-diisocyanate  | 822-06-0      | ii (Note1)                             | ×  | limited data available                           |
| Hexane  | 110-54-3      | ii (Note1)                             | ×  | limited data available                           |
| Hydrazine   | 302-01-2      | √                                      | ×  | limited data available                           |
| ⇔ Hydrochloric acid   | 7647-01-0     | ii (Note1)                             | ×  | √  |
| Hydrogen fluoride (Hydrofluoric acid)   | 7664-39-3     | ii (Note1)                             | ×  | √  |
| Isophorone  | 78-59-1       | i (Note1)                              | ×  | limited data available                           |
| * Inorganic Lead and Inorganic lead compounds<br>(includes elemental lead) (Note 4) | N/A           | √                                      | (Note 8)<br>limited data available                 | limited data available                           |
| Lead compounds (Note 4)<br>(does not include elemental lead)                        | 7439-92-1     | i (Note 1)                             | limited data available                             | limited data available                           |
| □ Lindane   | 58-89-9       | √                                      | ×  | limited data available                           |
| Maleic anhydride  | 108-31-6      | ii (Note1)                             | ×  | limited data available                           |
| ☼ Manganese and compounds (Note 4)  | 7439-96-5     | ii (Note1)                             | ×  | limited data available                           |
| Mercury and compounds (Note 4)  | 7439-97-6     | ii (Note1)                             | ×  | √  |

 $<sup>\</sup>sqrt{\ }$  - Health value has been approved by the Scientific Review Panel

X - Health value is currently under development by the OEHHA

<sup>‡ -</sup> Substance nominated for the development of additional health values

<sup>♥ -</sup> Substance is an active ingredient in pesticides in California

|  |               |  | I  |  |
|--|---------------|--|--|--|
| Substance  | CAS<br>Number | Cancer<br>Potency<br>Value<br>(Note 1) | Chronic<br>Reference<br>Exposure Level<br>(Note 2) | Acute<br>Reference<br>Exposure Level<br>(Note 3) |
| Mercuric chloride  | 7487-94-7     | i (Note1)                              | limited data available                             | limited data available                           |
| ☆ Methanol   | 67-56-1       | ii (Note1)                             | ×  | √  |
| ☼ Methyl bromide (Bromomethane)  | 74-83-9       | ii (Note1)                             | ×  | √  |
| Methyl chloroform (1,1,1-Trichloroethane)  | 71-55-6       | ii (Note1)                             | ×  | √  |
| Methyl ethyl ketone (2-Butanone)   | 78-93-3       | ii (Note1)                             | ×  | √  |
| Methyl isocyanate  | 624-83-9      | ii (Note1)                             | ×  | limited data available                           |
| Methyl methacrylate  | 80-62-6       | iii (Note1)                            | ×  | limited data available                           |
| ‡ Methyl tertiary butyl ether  | 1634-04-4     | √                                      | ×  | limited data available                           |
| 4,4-Methylene bis(2-chloroaniline)   | 101-14-4      | √                                      | limited data available                             | limited data available                           |
| * Methylene chloride (Dichloromethane)   | 75-09-2       | √                                      | ×  | √  |
| 4,4-Methylenedianiline   | 101-77-9      | √                                      | ×  | limited data available                           |
| Methylene diphenyl diisocyanate  | 101-68-8      | ii (Note1)                             | ×  | limited data available                           |
| Naphthalene  | 91-20-3       | ii (Note1)                             | ×  | limited data available                           |
| * Nickel and compounds (Note 4)<br>(metallic nickel and inorganic nickel<br>compounds) | 7440-02-0     | √                                      | ×  | √  |
| Nitrobenzene   | 98-95-3       | i (Note1)                              | ×  | limited data available                           |
| 2-Nitropropane   | 79-46-9       | i (Note1)                              | ×  | limited data available                           |
| N-Nitrosodimethylamine   | 62-75-9       | √                                      | limited data available                             | limited data available                           |
| N-Nitrosomorpholine  | 59-89-2       | √                                      | limited data available                             | limited data available                           |
| * Particulate emissions from diesel-fueled engines                                     | N/A           | √                                      | √  | limited data available                           |
| ☼ Pentachlorophenol  | 87-86-5       | √                                      | ×  | limited data available                           |
| Phenol   | 108-95-2      | ii (Note1)                             | ×  | √  |

 $<sup>\</sup>sqrt{\ }$  - Health value has been approved by the Scientific Review Panel

X - Health value is currently under development by the OEHHA

<sup>‡ -</sup> Substance nominated for the development of additional health values

<sup>♥ -</sup> Substance is an active ingredient in pesticides in California

| Substance                                     | CAS<br>Number | Cancer<br>Potency<br>Value<br>(Note 1) | Chronic<br>Reference<br>Exposure Level<br>(Note 2) | Acute<br>Reference<br>Exposure Level<br>(Note 3) |
|---|---------------|--|--|--|
| Phosgene                                      | 75-44-5       | ii (Note1)                             | ×  | √  |
| Phosphine                                     | 7803-51-2     | ii (Note1)                             | ×  | limited data available                           |
| ☼ Phosphorus                                  | 7723-14-0     | ii (Note1)                             | ×  | limited data available                           |
| Phthalic anhydride                            | 85-44-9       | ii (Note1)                             | ×  | limited data available                           |
| Polychlorinated biphenyls (Aroclors)          | 1336-36-3     | √                                      | limited data available                             | limited data available                           |
| Polycyclic Organic Matter (Note 9)            |               |  |  |  |
| Polycyclic Aromatic Hydrocarbon (PAH)         |               |  |  |  |
| including but not limited to:                 |               |  |  |  |
| Benzo[a]pyrene (Note 10)                      | 50-32-8       | √                                      | limited data available                             | limited data available                           |
| Potency Equivalency Factors for PAHs (Note 10 | 0)            |  |  |  |
| Benz[a]anthracene                             | 56-55-3       | √                                      | limited data available                             | no data available                                |
| Benzo[b]fluoranthene                          | 205-99-2      | √                                      | limited data available                             | no data available                                |
| Benzo[j]fluoranthene                          | 205-82-3      | √                                      | limited data available                             | no data available                                |
| Benzo[k]fluoranthene                          | 207-08-9      | √                                      | limited data available                             | no data available                                |
| Chrysene                                      | 218-01-9      | √                                      | limited data available                             | no data available                                |
| Dibenz[a,h]acridine                           | 226-36-8      | √                                      | limited data available                             | no data available                                |
| Dibenz[a,j]acridine                           | 224-42-0      | √                                      | limited data available                             | no data available                                |
| Dibenz[a,h]anthracene                         | 53-70-3       | √                                      | limited data available                             | no data available                                |
| Dibenzo[a,e]pyrene                            | 192-65-4      | √                                      | limited data available                             | no data available                                |
| Dibenzo[a,h]pyrene                            | 189-64-0      | √                                      | limited data available                             | no data available                                |
| Dibenzo[a,i]pyrene                            | 189-55-9      | √                                      | limited data available                             | no data available                                |
| Dibenzo[a,l]pyrene                            | 191-30-0      | √                                      | limited data available                             | no data available                                |
| 7H-Dibenzo[c,g]carbazole                      | 194-59-2      | √                                      | limited data available                             | no data available                                |

 $<sup>\</sup>sqrt{\ }$  - Health value has been approved by the Scientific Review Panel

X - Health value is currently under development by the OEHHA

<sup>‡ -</sup> Substance nominated for the development of additional health values

<sup>♥ -</sup> Substance is an active ingredient in pesticides in California

| Substance                       | CAS<br>Number | Cancer<br>Potency<br>Value<br>(Note 1) | Chronic<br>Reference<br>Exposure Level<br>(Note 2) | Acute<br>Reference<br>Exposure Level<br>(Note 3) |
|---------------------------------|---------------|--|--|--|
| 7,12-Dimethylbenz[a]anthracene  | 57-97-6       | √                                      | limited data available                             | limited data available                           |
| 1,6-Dinitropyrene               | 4239-76-48    | √                                      | limited data available                             | no data available                                |
| 1,8-Dinitropyrene               | 4239-76-59    | √                                      | limited data available                             | no data available                                |
| Indeno[1,2,3-cd]pyrene          | 193-39-5      | √                                      | limited data available                             | no data available                                |
| 3-Methylcholanthrene            | 56-49-5       | <b>√</b>                               | limited data available                             | limited data available                           |
| 5-Methylchrysene                | 3697-24-3     | √                                      | limited data available                             | no data available                                |
| 5-Nitroacenaphthene             | 602-87-9      | 602-87-9                               |  | no data available                                |
| 6-Nitrochrysene                 | 7496-02-8     | <b>√</b>                               | limited data available                             | no data available                                |
| 2-Nitrofluorene                 | 607-57-8      | √                                      | limited data available                             | no data available                                |
| 1-Nitropyrene                   | 5522-43-0     | √                                      | limited data available                             | limited data available                           |
| 4-Nitropyrene                   | 57835-92-4    | √                                      | limited data available                             | no data available                                |
| 1,3-Propane sultone             | 1120-71-4     | √                                      | limited data available                             | limited data available                           |
| ☼ Propylene oxide               | 75-56-9       | √                                      | ×  | √  |
| Selenium and compounds (Note 4) | 7782-49-2     | ii (Note1)                             | ×  | limited data available                           |
| Hydrogen selenide               | 7783-07-5     | ii (Note1)                             | ×  | √  |
| ‡ Styrene                       | 100-42-5      | i (Note1)                              | ×  | √  |
| Styrene oxide                   | 96-09-3       | i (Note1)                              | ×  | limited data available                           |
| 1,1,2,2-Tetrachloroethane       | 79-34-5       | √                                      | limited data available                             | limited data available                           |
| Toluene                         | 108-88-3      | ii (Note1)                             | ×  | √  |
| Toluene-2,4-diisocyanate        | 584-84-9      | √                                      | ×  | limited data available                           |
| 1,1,2-Trichloroethane           | 79-00-5       | √                                      | ×  | limited data available                           |
| * Trichloroethylene             | 79-01-6       | √                                      | ×  | limited data available                           |
| 2,4,6-Trichlorophenol           | 88-06-2       | V                                      | limited data available                             | limited data available                           |

- $\sqrt{\ }$  Health value has been approved by the Scientific Review Panel
- X Health value is currently under development by the OEHHA
- ‡ Substance nominated for the development of additional health values
- ♥ Substance is an active ingredient in pesticides in California

| Substance                                  | CAS<br>Number | Cancer<br>Potency<br>Value<br>(Note 1) | Chronic<br>Reference<br>Exposure Level<br>(Note 2) | Acute<br>Reference<br>Exposure Level<br>(Note 3) |
|--|---------------|--|--|--|
| Triethylamine                              | 121-44-8      | ii (Note 1)                            | ×  | $\sqrt{}$  |
| Vinyl acetate                              | 108-05-4      | i (Note1)                              | ×  | limited data available                           |
| * Vinyl chloride (Chloroethylene)          | 75-01-4       | √                                      | ×  | √  |
| Vinylidene chloride (1,1-Dichloroethylene) | 75-35-4       | ii (Note1)                             | ×  | limited data available                           |
| ☼ Xylenes (mixed isomers)                  | 1330-20-7     | ii (Note1)                             | ×  | √  |
| m-Xylene                                   | 108-38-3      | ii (Note1)                             | ×  | √  |
| o-Xylene                                   | 95-47-6       | ii (Note1)                             | ×  | √  |
| p-Xylene                                   | 106-42-3      | ii (Note1)                             | ×  | <b>√</b>   |

 $<sup>\</sup>sqrt{\ }$  - Health value has been approved by the Scientific Review Panel

X - Health value is currently under development by the OEHHA

<sup>‡ -</sup> Substance nominated for the development of additional health values

<sup>♥ -</sup> Substance is an active ingredient in pesticides in California

| Substance  | CAS<br>Number | Cancer<br>Potency<br>Value<br>(Note 1) | Chronic<br>Reference<br>Exposure Level<br>(Note 2) | Acute<br>Reference<br>Exposure Level<br>(Note 3) |
|--|---------------|--|--|--|
| Ammonia  | 7664-41-7     | ii (Note 1)                            | ×  | $\sqrt{}$  |
| ☼ Chlorine dioxide                                     | 10049-04-4    | ii (Note1)                             | ×  | limited data available                           |
| ⇔ Chloropicrin   | 76-06-2       | ii (Note1)                             | ×  | √  |
| ☼ Copper and compounds (Note 4)                        | 7440-50-8     | ii (Note1)                             | limited data available                             | √  |
| ☼ Creosotes  | N/A           | √                                      | limited data available                             | limited data available                           |
| ☆ Ethylene   | 74-85-1       | ii (Note1)                             | ×  | limited data available                           |
| Glutaraldehyde   | 111-30-8      | ii (Note1)                             | ×  | limited data available                           |
| Hexachlorocyclohexanes                                 | 608-73-1      | √                                      | ×  | limited data available                           |
| Hydrogen sulfide                                       | 7783-06-4     | ii (Note1)                             | ×  | √  |
| ☆ Isopropyl alcohol                                    | 67-63-0       | ii (Note1)                             | ×  | √  |
| Michler's ketone (4,4'-Bis(dimethylamino)benzophenone) | 90-94-8       | √                                      | limited data available                             | limited data available                           |
| Nitric acid  | 7697-37-2     | ii (Note1)                             | ×  | √  |
| ⇔ Phosphoric acid                                      | 7664-38-2     | ii (Note1)                             | ×  | limited data available                           |
| ❖ Silver and compounds (Note 4)                        | 7440-22-4     | ii (Note1)                             | ×  | limited data available                           |
| ⇔ Sodium hydroxide                                     | 1310-73-2     | ii (Note1)                             | ×  | √  |
| ⇔ Sulfuric acid  | 7664-93-9     | ii (Note1)                             | ×  | √  |
| ☆ Zinc and compounds (Note 4)                          | 7440-66-6     | ii (Note1)                             | ×  | limited data available                           |

<sup>-</sup> To be listed as a Toxic Air Contaminant, these substances will go though a comprehensive AB 1807 risk assessment.

<sup>🌣 -</sup> Substance is an active ingredient in pesticides in California

 $<sup>\</sup>sqrt{\ }$  - Health value has been reviewed by the Scientific Review Panel

X - Health value is currently under development by the OEHHA

<sup>‡ -</sup> Substance nominated for the development of additional health values

# Substances known to be emitted in California, and are NOMINATED for development of health values or additional health values.

| Category IIIa Identified as Toxic Air Contaminants   |               | Category IIIb NOT Identified as Toxic Air Contaminar |               |
|--|---------------|--|---------------|
| Substance  | CAS<br>Number | Substance  | CAS<br>Number |
| Methyl tertiary butyl ether (Note 15)<br>(Substance also in Category IIa)                          | 1634-04-4     | Crystalline silica                                   | 7631-86-9     |
| Polycyclic Organic Matter (Note 9)   | N/A           |  |               |
| Other PAHs and Nitro-PAHs not listed in Category IIa or IVa (specific PAHs still to be determined) |               |  |               |
| Styrene (Substance also in Category IIa)   | 100-42-5      |  |               |

To be listed as a Toxic Air Contaminant, these substances will go though a comprehensive AB 1807 risk assessment.

B - 11 Category III

Category IVa

# Substances identified as Toxic Air Contaminants, known to be emitted in California, and are TO BE EVALUATED for entry into Category III

| Substance              | CAS<br>Number | Substance                                      | CAS<br>Number |
|------------------------|---------------|--|---------------|
| Acetonitrile           | 75-05-8       | Fine mineral fibers (Note 13)                  | N/A           |
| Acetophenone           | 98-86-2       | Hydroquinone                                   | 123-31-9      |
| o-Anisidine            | 90-04-0       | Methyl chloride (Chloromethane)                | 74-87-3       |
| Biphenyl               | 92-52-4       | Methyl hydrazine                               | 60-34-4       |
| Carbonyl sulfide       | 463-58-1      | Methyl isobutyl ketone (Hexone)                | 108-10-1      |
| Catechol               | 120-80-9      | ☼ Pentachloronitrobenzene (Quintobenzene)      | 82-68-8       |
| Chloroacetic acid      | 79-11-8       | p-Phenylenediamine                             | 106-50-3      |
| Chlorobenzilate        | 510-15-6      | Polycyclic Organic Matter (POM) (Note 9)       | N/A           |
| Chloroprene            | 126-99-8      | (other POMs not listed in Category IIa or III) |               |
| Cumene                 | 98-82-8       | including but not limited to:                  |               |
| Dibenzofuran           | 132-64-9      | Anthracene                                     | 120-12-7      |
| Dibutylphthalate       | 84-74-2       | Propionaldehyde                                | 123-38-6      |
|                        | 542-75-6      | Propylene dichloride                           | 78-87-5       |
| 1,1-Dimethyl hydrazine | 57-14-7       | 1,2-Propylenimine (2-Methyl aziridine)         | 75-55-8       |
| Dimethyl phthalate     | 131-11-3      | Radionuclides (including radon) (Note 12)      | N/A           |
| Dimethyl sulfate       | 77-78-1       | Titanium tetrachloride                         | 7550-45-0     |
| Ethyl acrylate         | 140-88-5      | 1,2,4-Trichlorobenzene                         | 120-82-1      |
|                        |               | 2,2,4-Trimethylpentane                         | 540-84-1      |

<sup>🌣 -</sup> Substance is an active ingredient in pesticides in California

# **Category IVb**

# Substances NOT identified as Toxic Air Contaminants, known to be emitted in California, and are TO BE EVALUATED for entry into Category III.

| Substance                                  | CAS<br>Number | Substance                             | CAS<br>Number |
|--|---------------|---------------------------------------|---------------|
| ⇔ Aluminum and compounds (Note 4)          | 7429-90-5     | Decabromodiphenyl oxide               | 1163-19-5     |
| Ammonium nitrate                           | 6484-52-2     | Dialkylnitrosamines                   | N/A           |
| Ammonium sulfate                           | 7783-20-2     | Diaminotoluene (mixed isomers)        | N/A           |
| Barium and compounds (Note 4)              | 7440-39-3     | Dicofol                               | 115-32-2      |
| Benzoyl chloride                           | 98-88-4       | Environmental Tobacco Smoke (Note 14) | N/A           |
| Bis(2-ethylhexyl)adipate                   | 103-23-1      | Gasoline Vapors                       | N/A           |
| Bromine and compounds (inorganic) (Note 4) | 7726-95-6     | 4,4'-Isopropylidenediphenol           | 80-05-7       |
| Butyl acrylate                             | 141-32-2      | Molybdenum trioxide                   | 1313-27-5     |
| □ n-Butyl alcohol                          | 71-36-3       | Nitrilotriacetic acid                 | 139-13-9      |
| sec-Butyl alcohol                          | 78-92-2       | Peracetic acid                        | 79-21-0       |
| tert-Butyl alcohol                         | 75-65-0       |                                       | 90-43-7       |
| Butyl benzyl phthalate                     | 85-68-7       | Propene                               | 115-07-1      |
| Carbon black and Carbon black extracts     | 1333-86-4     | Terephthalic acid                     | 100-21-0      |
| Chlorinated fluorocarbons                  | N/A           | Thiourea                              | 62-56-6       |
| Chlorophenols                              | N/A           | 1,2,4-Trimethylbenzene                | 95-63-6       |
| Cumene hydroperoxide                       | 80-15-9       |                                       |               |
| Cyclohexane                                | 110-82-7      |                                       |               |

<sup>-</sup> To be listed as a Toxic Air Contaminant, these substances will go though a comprehensive AB 1807 risk assessment.

<sup>🌣 -</sup> Substance is an active ingredient in pesticides in California

# **Category V**

Substances identified as Toxic Air Contaminants, and NOT KNOWN TO BE EMITTED from stationary source facilities in California based on information from the AB 2588 Air Toxic "Hot Spots" Program and the California Toxic Release Inventory.

| Substance                                     | CAS<br>Number | Substance                        | CAS<br>Number |
|---|---------------|----------------------------------|---------------|
| 2-Acetylaminofluorene                         | 53-96-3       | 4,6-Dinitro-o-cresol, and salts  | 534-52-1      |
| 4-Aminobiphenyl                               | 92-67-1       | 2,4-Dinitrophenol                | 51-28-5       |
| Benzidine                                     | 92-87-5       | 2,4-Dinitrotoluene               | 121-14-2      |
| Benzotrichloride                              | 98-07-7       | 1,2-Diphenylhydrazine            | 122-66-7      |
| Bromoform                                     | 75-25-2       | Ethylene imine (Aziridine)       | 151-56-4      |
| Calcium cyanamide                             | 156-62-7      | Heptachlor                       | 76-44-8       |
| Caprolactam                                   | 105-60-2      | Hexachlorobutadiene              | 87-68-3       |
| Chloramben                                    | 133-90-4      | Hexachlorocyclopentadiene        | 77-47-4       |
| Chlordane                                     | 57-74-9       | Hexamethylphosphoramide          | 680-31-9      |
| 2-Chloroacetophenone                          | 532-27-4      | Methyl iodide (Iodomethane)      | 74-88-4       |
| Chloromethyl methyl ether                     | 107-30-2      | 4-Nitrobiphenyl                  | 92-93-3       |
| Coke oven emissions                           | N/A           | 4-Nitrophenol                    | 100-02-7      |
| o-Cresol                                      | 95-48-7       | N-Nitroso-N-methylurea           | 684-93-5      |
| p-Cresol                                      | 106-44-5      | Parathion                        | 56-38-2       |
| DDE (p,p-Dichlorodiphenyldichloroethylene)    | 72-55-9       | beta-Propiolactone               | 57-57-8       |
| Diazomethane                                  | 334-88-3      | Quinoline                        | 91-22-5       |
| 1,2-Dibromo-3-chloropropane                   | 96-12-8       | Quinone                          | 106-51-4      |
| Dichloroethyl ether (Bis(2-chloroethyl)ether) | 111-44-4      | 2,4-Toluene diamine              | 95-80-7       |
| N,N-Diethyl aniline (N,N-Dimethyl aniline)    | 121-69-7      | o-Toluidine                      | 95-53-4       |
| Diethyl sulfate                               | 64-67-5       | Toxaphene (Chlorinated camphene) | 8001-35-2     |
| 3,3-Dimethoxybenzidine                        | 119-90-4      | 2,4,5-Trichlorophenol            | 95-95-4       |
| 4-Dimethyl aminoazobenzene                    | 60-11-7       | Vinyl bromide                    | 593-60-2      |
| 3,3-Dimethyl benzidine                        | 119-93-7      |                                  |               |
| Dimethyl carbamoyl chloride                   | 79-44-7       |                                  |               |

B - 14 Category V

# **Category VI**

Substances identified as Toxic Air Contaminants, NOT KNOWN TO BE EMITTED from stationary source facilities in California, and are active ingredients in pesticides in California.

For further information regarding the pesticidal uses of these compounds, please contact the Department of Pesticide Regulation.

| Substance          | CAS<br>Number | Substance           | CAS<br>Number |
|--------------------|---------------|---------------------|---------------|
| ☆ Captan           | 133-06-2      | ☼ Dichlorvos        | 62-73-7       |
| □ Carbaryl         | 63-25-2       | ☆ Methoxychlor      | 72-43-5       |
|                    | 108-39-4      | ⇔ Propoxur (Baygon) | 114-26-1      |
| <ul><li></li></ul> | 94-75-7       | ☼ Trifluralin       | 1582-09-8     |

<sup>🌣 -</sup> Substance is an active ingredient in pesticides in California

B - 15 Category VI

#### **Footnotes**

- \* Substances which have already been identified by the Air Resources Board as Toxic Air Contaminants through a comprehensive AB 1807 risk assessment and which have health values developed by the Office of Environmental Health Hazard Assessment and approved by the Scientific Review Panel. A full risk assessment report is available.
- \*\* AB 1807, Statutes 1983, chapter 1047, Health & Safety Code sections 39650 et. seq. AB 2728, Statutes 1992, chapter 1161, Health & Safety Code sections 39655 et. seq.

To be listed as a Toxic Air Contaminant, these substances will go though a comprehensive AB 1807 risk assessment.

- $\sqrt{\phantom{a}}$  Health value reviewed by the Scientific Review Panel.
- X Health value under development by the Office of Environmental Health Hazard Assessment for review by the Scientific Review Panel.
- These substances have been nominated for the development of additional health values.
- These substances are active ingredients in pesticides in California. For further information regarding the pesticidal uses of these compounds, please contact the Department of Pesticide Regulation.
- Note 1: Substances in Category IIa & IIb without a draft or Scientific Review Panel reviewed Cancer Potency Value have been divided into 3 groups depending on their cancer classification by the U.S Environmental Protection Agency (U.S. EPA) or the International Agency for Research on Cancer (IARC).
  - i Classified by U.S. EPA and/or IARC as a probable or possible human carcinogen (Group B1, B2, C, 2A, or 2B substances);
  - ii Classified by U.S. EPA and/or IARC as insufficient/inadequate data exist to classify as to carcinogenicity to humans (Group 3 or D substances), or no data or value available at this time:
  - iii Considered not likely to be carcinogenic to humans by U.S. EPA and/or IARC (Group 4 or E substances).
- Note 2: The literature was reviewed for substances in Category IIa & IIb without a draft or Scientific Review Panel reviewed Chronic Reference Exposure Level. "Limited data available" was added to the row if some chronic toxicity data was found in the literature. "No data available" was added to the row if no chronic toxicity data was found in the literature.
- Note 3: The literature was reviewed for substances in Category IIa & IIb without a draft or Scientific Review Panel reviewed Acute Reference Exposure Level. "Limited data available" was added to the row if some acute toxicity data was found in the literature. "No data available" was added to the row if no acute toxicity data was found in the literature.
- Note 4: For all listings above which contain the word "compounds" and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e, antimony, arsenic, etc.) as part of that chemical's infrastructure.

#### **Footnotes Continued**

- Note 5: Chlorinated dibenzo-*p*-dioxins and dibenzofurans: The cancer potency value for 2,3,7,8-tetrachlorodibenzo-*p*-dioxin was determined for the identification of chlorinated dioxins and dibenzofurans as toxic air contaminants in 1986. At that time, the Board identified dibenzo-*p*-dioxins and dibenzofurans chlorinated in the 2,3,7, and 8 positions and containing 4,5,6, or 7 chlorine atoms as toxic air contaminants. Since 1986, International Toxicity Equivalency Factors (ITEFs) have been developed which are used to evaluate the cancer risk due to exposure to samples containing mixtures of chlorinated dibenzo-*p*-dioxins and dibenzofurans. ITEFs are numerical factors that express the toxicity of an individual chlorinated dibenzo-*p*-dioxin or dibenzofuran relative to the toxicity of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin. ITEFs are listed for 16 chlorinated dibenzo-*p*-dioxins and dibenzofurans.
- Note 6: Diethanolamine: There is a 1997 draft report by the National Toxicology Program that shows evidence of carcinogenic activity in mice. (This may result in a change of the cancer classification.)
- Note 7: Glycol ethers: Includes mono- and di-ethers of ethylene glycol, diethylene glycol, and triethylene glycol  $(R(OCH_2CH_2)_n OR')$  where

n = 1,2 or 3

R = alkyl or aryl groups

R' = R,H, or groups which, when removed, yield glycol ethers with the structure;

R(OCH<sub>2</sub>CH)<sub>n</sub>-OH. Polymers are excluded from the glycol category.

- Note 8: Inorganic Lead: Due to information on non-cancer health effects showing no identified threshold, no Reference Exposure Level has been developed. However, guidelines for assessing noncancer health impacts are currently being developed by ARB staff.
- Note 9: Polycyclic organic matter: Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100 °C.
- Note 10: Benzo[a]pyrene: Potency Equivalency Factors (PEF) have been developed for 24 polycyclic aromatic hydrocarbons (PAHs). Using benzo[a]pyrene as a reference compound, a weighting scheme for PAHs was developed in the 1994 Air Resources Board document entitled, *Benzo[a]pyrene as a Toxic Air Contaminant*. When a specific potency value is developed for a chemical, it should be used in place of the PEF.
- Note 11: Cyanide compounds: X'CN where X=H' or any other group where a formal dissociation may occur. For example, KCN or Ca(CN)<sub>2</sub>
- Note 12: Radionuclides: A type of atom which spontaneously undergoes radioactive decay.
- Note 13: Fine mineral fibers: Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.
- Note 14: Environmental tobacco smoke: An AB 1807-type of health assessment for Environmental Tobacco Smoke was conducted by the Office of Environmental Health Hazard Assessment (OEHHA) and was approved by the Scientific Review Panel on June 19, 1997. The Air Resources Board accepted the report from OEHHA on October 23, 1997 and subsequently forwarded to the Department of Health Services' Tobacco Control Program for appropriate action.
- Note 15: The OEHHA completed its inhalation cancer potency risk assessment on MTBE and the Scientific Review Panel approved it at its November 1999 meeting.

ARB/SSD/SES December 1999